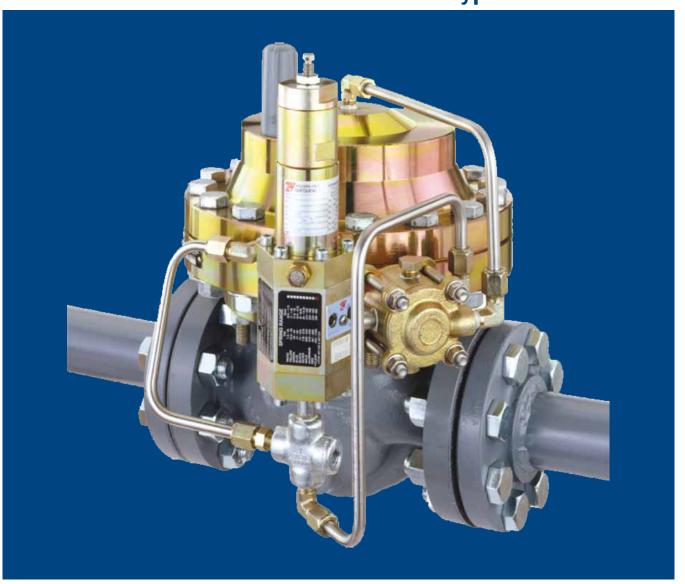
PRESSURE REGULATORS

Type EZH and EZHSO



Europe, Middle East, and Africa Only





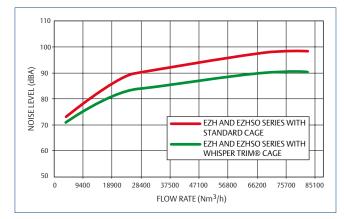
Pressure Regulators

Type EZH and EZHSO (Spring-to-Open) regulators are accurate pilot-operated, pressure balanced, soft seated regulators.

They are designed for use in **high pressure** natural gas transmission/city gate stations, **large capacity** distribution systems, and power plant feeds. They provide smooth, reliable operation, tight shutoff and long life.

The main benefits are as follows:

- Long life in severe service applications
- High resistance to aromatics and particle erosion
- Noise attenuation module (optional)
- High turn down capacity for systems with large variations in downstream flow demand
- Absolutely no bleed to atmosphere
- Wide range of flow coefficients for each body size
- Bubble tight shutoff
- Accurate pressure control
- Low temperature standard version
- Integral strength
- Easy maintenance system
- Spring-to-close and spring-to-open versions
- Long life in severe service applications: The Type EZH
 and EZHSO utilize a metal plug design to deflect particles
 and debris away from the soft-seat, which gives enhanced
 resistance to particle erosion to provide a longer service life.
 In addition, the Type EZH and EZHSO can be constructed with
 fluoroelastomer soft parts to extend service life in applications
 where liquid aromatics are entrained in the gas.
- High turn down capability: The oversized diaphragm and unique piloting system of the Type EZH and EZHSO allow for a 100:1 turn down ratio, which will provide superior pressure control in systems with large variations in downstream flow demand.
- Noise attenuation module: The EZH and EZHSO offer an optional Whisper Trim Cage which is integral to the regulator therefore maintaining the advantages of it's compact design. The Whisper Trim Cage is available on DN 50, 80 and 100. It allows for a noise attenuation up to 8 dB.
- Absolutely no bleed to atmosphere: The Type EZH
 and EZHSO eliminate nuisance and wasteful bleed gas to
 atmosphere by utilizing a pilot-operated control system,
 which bleeds 100% of the gas to the downstream system
 while the regulator is operating.
- Wide range of flows coefficients for each body size: The EZH and EZHSO offer the possibility of flow reduction ranges according to each body size. This is achieved by simply replacing the standard seat by a reduction seat.



Noise Comparison Diagram



Whisper Trim Cage

- Bubble tight shutoff: The Type EZH and EZHSO have a knifeedged, metal plug and a soft seat which provides bubble tight shutoff for use in applications where positive shutoff is required. For example: dead-end systems.
- Accurate pressure control: The Type EZH and EZHSO use the Type PRX and SA/2 pilot system to provide stable and accurate downstream pressure control regardless of load changes or inlet pressure variations.
- Easy maintenance system: A top entry design reduces maintenance time. Trim parts can be inspected, cleaned and replaced without removing the body from the pipeline. An innovative system has been designed for the EZH DN 100 which allows maintenance to be carried out by a single operator. Maintenance is carried out by simply removing the top plug, extracting the trim assembly (12.3 kg), removing the pad holder and then changing the pad. Easy and fast maintenance, no special tools requirement, makes the EZH ownership low in cost.
- Spring-to-close and spring-to-open versions: Optional
 positions to choose from in case of main valve diaphragm
 failure or lack of supply pressure to the pilot. See table on
 page 6 for "Failure Mode Analysis".



EZH DN 100 Patent Pending Easy Maintenance System

Configurations

Type EZH: Pilot-operated pressure reducing regulator for low to high outlet pressure.

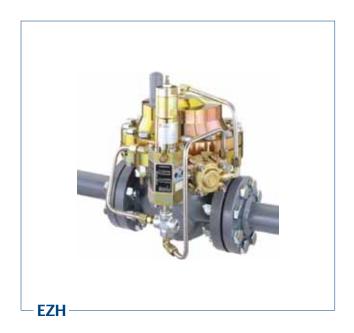
Type EZH-OS2: Type EZH pressure reducing regulator with an OS2 slam-shut device for overpressure or overpressure and

underpressure protection.

Type EZHSO: Spring-to-Open pilot-operated pressure reducing regulator for low to high outlet pressure.

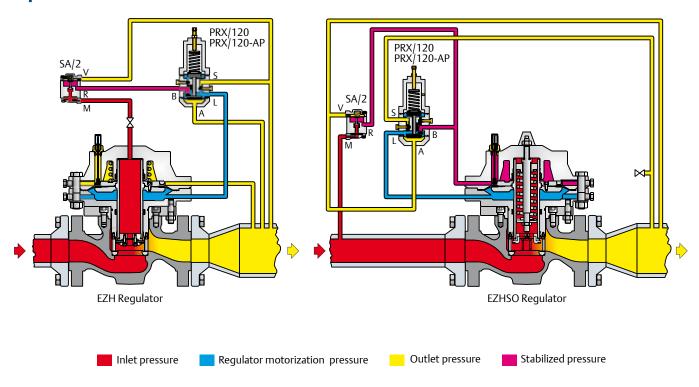
Type EZHSO-OS2: Type EZHSO pressure reducing regulator with an OS2 slam-shut device for overpressure or overpressure and

underpressure protection.





Operation



The pilot-operated type EZH uses inlet pressure as the operating medium, which is reduced through pilot operation to load the actuator diaphragm. Outlet pressure (Pd) opposes the motorization pressure (Pm) in the actuator and also opposes the pilot control spring. Type EZHSO Spring-to-Open version uses inlet pressure as the operating medium, which is reduced through pilot operation to load the actuator diaphragm (lower chamber). The upper case of Type EZHSO actuator is filled with pressure coming from stabilizer filter Type SA/2. This pressure on the upper chamber of the regulator actuator diaphragm opposes the main spring force that tends to open the regulator. The outlet pressure opposes the pilot control spring. For the start-up of Type EZHSO, it's necessary to install a vent valve in type PRX pilot bleed line connection (line from port S to downstream pipe) in order to vent the pressure from actuator lower chamber to close the regulator.

Opening

When the outlet pressure (Pd) drops below the setting of the pilot control spring, pilot control spring force on the pilot diaphragm thus opens the pilot valve plug, providing additional motorization pressure (Pm) to the actuator diaphragm. This diaphragm motorization pressure opens the main valve plug, supplying the required flow to the downstream system. Any excess motorization pressure on the actuator diaphragm escapes downstream through the bleed restriction in the pilot.

Closing

EZH - When the gas demand in the downstream system has been satisfied, the outlet pressure (Pd) increases. The increased pressure is transmitted through the downstream control line and acts on the pilot diaphragm. This pressure exceeds the pilot spring setting and moves the diaphragm, closing the orifice. The motorization pressure (Pm) acting on the main diaphragm bleeds to the downstream system through a bleed restriction in the pilot.

EZHSO - When the outlet pressure (Pd) increase over the setting of the pilot spring, the pilot valve disk will be closed, reducing motorization pressure (Pm) to the lower chamber of the regulator actuator diaphragm; the pressure in the upper chamber will force the regulator to close.

Adjustment

The adjustment of the regulator is performed by means of the pilot adjusting screw, which causes variation of the compression of the control spring. Adjustment is performed while the regulator is in operation with the aid of a pressure gauge to monitor downstream pressure. The shut-off valve downstream of the regulator must not be completely closed, it is necessary that a small quantity of gas flows downstream to allow the outlet side to vent when it is necessary to lower the pressure.

Operation

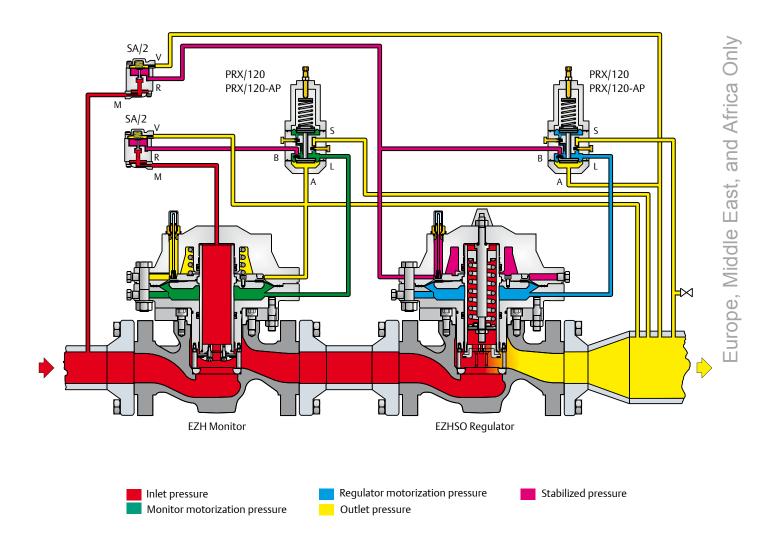
Monitoring System

Monitoring regulation is overpressure protection by containment, therefore, there is no relief valve to vent to the atmosphere.

When the working regulator fails to control the pressure, a monitor regulator installed in series, which has been sensing the downstream and control pressure, goes into operation to maintain the downstream pressure at a slightly higher level than normal pressure.

During an overpressure situation, the monitoring system keeps the customer on line.

Wide-Open Monitoring Systems



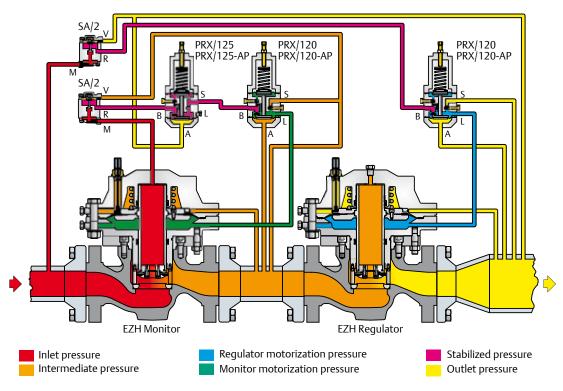
This figure shows an upstream wide open monitor Type EZH and a downstream active regulator Type EZHSO (Spring-to-Open).

In this installation, if the Type EZHSO no longer controls the outlet pressure, it will remain open, letting the Type EZH regulator to reach the required outlet pressure.

In case of failure of the Type EZH, it will close and protect the downstream system from overpressure condition.

Operation

Working Monitoring System



In a working monitoring system, the upstream regulator requires two pilots and it is always the monitoring regulator. In this way, both units are always operating and can be easily checked for proper operation. In normal operation, the working regulator controls the outlet pressure of the system. The monitoring regulator's working pilot PRX/120 or PRX/120-AP controls the intermediate pressure and the monitor pilot PRX/125 or PRX/125-AP senses the system's outlet pressure. If the working regulator fails, the monitoring pilot PRX/125 or PRX/125-AP will sense the increase in outlet pressure and take control. The working regulator must be rated for the maximum allowable operating pressure of the system because this will be its inlet pressure if the monitoring regulator fails. Also, the outlet pressure rating of the monitoring pilot PRX/125 or PRX/125-AP and any other components that are exposed to the intermediate pressure must be rated for full inlet pressure. Working monitor installations require a Type EZH or EZHSO main valve with a Type PRX/120 or PRX/120-AP working pilot and a Type PRX/125 or PRX/125-AP monitoring pilot for the upstream regulator, and a Type EZH or EZHSO with the appropriate Type PRX/120 or PRX/120-AP pilot for the downstream regulator.

Failure Mode Analysis

Part Name	Failure (Worst Case)	Cause of Failure	Effect	Туре	Regulator Re	action Mode
T:14	Files blads distance	District	Decrease of feeding pressure	EZHSO	Open	
Filter	Filter blocked / clogged	Dirty gas	gives decrease of motorization pressure	EZH		Close
Pilot Disk	Pilot cannot be closed	Dirty gas	l	EZHSO	Open	
PIIOT DISK	Pilot Califlot de Closed	(microparticles), sour gas	Increase motorization pressure	EZH	Open	
Pilot Lower	Pilot Lower St Fabric qual		ic quality,	EZHSO	Open	
Diaphragm	Pilot cannot control	sour gas	Decrease motorization pressure	EZH		Close
Pilot Upper	Pilot cannot feed the	Fabric quality,	Decrees metarization procesure	EZHSO	Open	
Diaphragm	regulator	sour gas	Decrease motorization pressure	EZH		Close
Regulator	Not proper performance of the motorization	Fabric quality,	Balancing of pressures and charge	EZHSO	Open	
Diaphragm	pressure chamber	sour gas	or discharge of the motorization pressure chamber	EZH		Close

Features

Applications

EZH and EZHSO series regulators are used in reduction, distribution and conveying stations of suitably filtered natural gas. They can also be used for air, propane, butane, LPG, city gas, nitrogen, carbon dioxide and hydrogen.

Technical Features

Allowable pressure PS : up to 100 bar Inlet pressure P_u : 1 to 100 bar Set range P_d : 1 to 80 bar

Min. operating differential pressure

Type EZH Δp_{min} : 1 bar Type EZHSO Δp_{min} : 3.8 bar

Max. operating differential pressure

Type EZH Δp_{min} : 99 bar Type EZHSO Δp_{min} : 96.2 bar

Functional Features

Accuracy class

Type EZH AC : up to \pm 1% Type EZHSO AC : up to \pm 2.5% Lock-up pressure class SG : up to \pm 5% Class of lock-up pressure zone SZ : up to 5% Operating temperature TS : -20 / 60 °C

Shut-off device

Max. operating differential pressure Δp_{max} : 99 bar Response time ta : < 1 s

Accuracy class

Diaphragm and bellows version AG : up to \pm 2.5% Piston version AG : up to \pm 5% Set pressure range $W_{du} - W_{do} : 0.010 / 100 \text{ bar}$

Flanged connections

Same Inlet and outlet: DN 25 - 50 - 80 - 100*

* Available only for EZH and EZH-OS2 configurations

Flange rating: PN 16 B - PN 25 B - PN 40 B

ANSI 150 RF - ANSI 300 RF - ANSI 600 RF

Materials

Body Steel Regulator valve plug Stainless steel Connecting parts and bottom Steel Slam-shut valve plug Stainless steel

Actuator Steel Regulator plug disc Nitrile or fluorcarbon (FKM)
Regulator / Slam-shut orifice Stainless steel Slam-shut O-rings Nitrile or fluorcarbon (FKM)

Calculation Procedures

Symbols

Q = Natural gas flow rate in Stm³/h

P1 = Absolute inlet pressure in bar

P2 = Absolute outlet pressure in bar

 C_q = Flow rate coefficient

C1 = Body shape factor

d = Relative density of the gas

Flow Coefficients

			TYPE E	ZH DN25,50	,80 and 100	- TYPE EZHS	O DN 25, 50	and 80	
	Reduction		Slam-Shu	t (X Body)		W	ithout Slam/	-Shut (E Bod	ly)
		DN 25	DN 50	DN 80	DN 100	DN 25	DN 50	DN 80	DN 100
	0	284	1078	2247	3567	280	1088	2266	3696
Of	1	210	908	1684	2969	218	829	1698	2902
Qf	2	126	671	1058	1763	128	607	1066	1784
	3	79	385	685	1062	81	370	690	1072
	0	550	2092	4359	6920	544	2110	4396	7170
	1	408	1762	3266	5760	423	1609	3294	5630
C _g	2	245	1301	2052	3420	249	1177	2069	3460
	3	154	746	1328	2060	157	718	1339	2080
	0	31.3	38.3	30.6	32.4	35.5	33.5	30.8	31.4
C1	1	34.3	35.3	33.9	35.2	38.7	31.9	33.9	34.2
C1	2	33.6	36.6	37.8	37.4	39.7	35.6	37.8	36.3
	3	32.1	40.8	33.6	37.1	39.3	38.2	33.6	37.3
Regulator travel (mm)		9	17	25	30	9	17	25	30
Slam-sh	nut travel (mm)	1	5	30	50				

Flow Rate Q

Sub-critical state with: P2 >
$$\frac{P1}{2}$$

Q =
$$0.525 \cdot C_g \cdot P1 \cdot sine \left(\frac{3417}{C1} \cdot \sqrt{\frac{P1-P2}{P1}} \right)^{\circ}$$

N.B. the sine argument is expressed in sexagesimal degree.

Critical state with:
$$P2 \le \frac{P1}{2}$$

$$Q = 0.525 \cdot C_g \cdot P1$$

For other gases with different densities, the flow rate calculated with the above formulas must be multiplied by the correction factor:

$$F = \sqrt{\frac{0.6}{d}}$$

Gas	Relative Density d	Factor F		
Air	1	0.78		
City gas	0.44	1.17		
Butane	2.01	0.55		
Propane	1.53	0.63		
Nitrogen	0.97	0.79		
Carbon dioxide	1.52	0.63		
Hydrogen	0.07	2.93		

DN Sizes

Calculate the required C_q with the following formula:

Sub-critical with: P2 > $\frac{P1}{2}$

$$C_g = \frac{Q}{0.525 \cdot P1 \cdot sine \left(\frac{3417}{C1} \cdot \sqrt{\frac{P1 - P2}{P1}}\right)^{\circ}}$$

N.B. The sine argument is expressed in sexagesimal degree.

Critical state with: $P2 \le \frac{P1}{2}$

$$C_g = \frac{Q}{0.525 \cdot P1}$$

N.B. The above formulas apply to natural gas flow rate only. If the flow rate value (Q) refers to other gasses, divide it by the correction factor F.

Select the diameter of the regulator with Cg higher than calculated value.

After finding the DN of the regulator, check that gas speed on the seat does not exceed 120 m/sec, using the following formula:

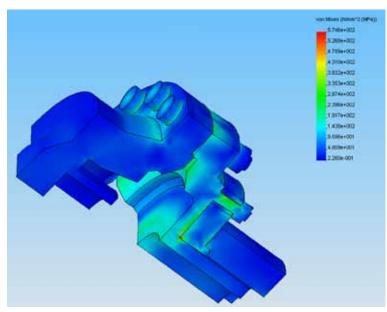
$$V = 345.92 \cdot \frac{Q}{DN^2} \cdot \frac{1 - 0.002 \cdot P_u}{1 + P_u}$$

V = Velocity (m/s)

345.92 = Numerical constant

Q = Flow rate under standard conditions (Stm³/h)

DN = Regulator nominal diameter (mm)
P. = Inlet pressure in relative value (bar)



Advanced Design Tools

Slam-Shut Device

The optional slam-shut device can provide either overpressure or overpressure and underpressure protection by completely shutting off the flow of gas to the downstream system. The slam-shut has a mechanism box and a manometric device. The manometric device is a spring and diaphragm actuator. Its movement activates the detection stage of the mechanism box.

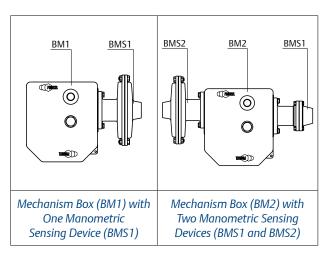
The shutoff is a two stage process, the detection stage and the power stage. This separation between detection stage and power stage provides maximum precision, alleviating many false trips caused by environmental vibrations.

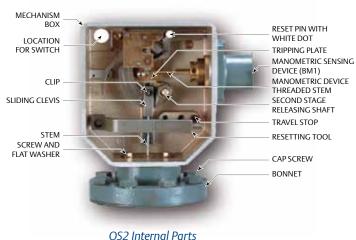
The slam-shut device includes a bypass valve that will allow pressure to be equalized when resetting the device. Once the slam-shut device has been tripped, it must be manually reset.

For more information about the Type EZH and EZHSO with a slam-shut device, contact the local Sales Representative or Sales Office.

Spring Adjustment Ranges (BMS)

	BMS			Max. Only			Min. Only		Max. 8	& Min.	Inte	rvals			
			Wd	lso Setting (l	bar)	Wd	su Setting (l	bar)	Wdsu Set	ting (bar)	∆1 8	& ∆ 2			
Туре	Size	PMS box	Max.	Recommended Range		Min.	Recommended Range		Min.			4.7			
туре	Size	(bar)		(bar)		low pt. possible	Max. low pt.	Max. high pt.	low pt. possible	Min. low pt.	Min. high pt.	low pt. possible	Max. high pt.	∆1 (bar)	∆2 (bar)
			0.010	0.015	0.035	0.010	0.015	0.035	0.010	0.035	0.004	0.010			
	Diaphragm 162 10		0.025	0.040	0.080	0.025	0.040	0.080	0.025	0.080	0.005	0.025			
				0.045	0.080	0.140	0.045	0.080	0.150	0.045	0.140	0.010	0.050		
		162 10	0.070	0.070	0.240	0.070	0.070	0.240	0.070	0.240	0.014	0.060			
mgi		10	0.115	0.140	0.380	0.115	0.150	0.400	0.115	0.380	0.018	0.150			
phra			0.140	0.300	0.750	0.140	0.300	0.650	0.140	0.750	0.050	0.350			
Dia			0.250	0.600	1.3	0.250	0.600	1.15	0.230	1.3	0.080	0.600			
			0.450	1.2	2.3	0.450	1.1	2.0	0.450	2.3	0.170	1.1			
			1.0	2.0	5.1	1.0	2.0	4.7	1.0	5.1	0.350	2.5			
	071	20	2.1	4.0	11.0	2.1	4.0	9.5	2.1	11.0	0.700	5.5			
			4.0	8.0	16.0	4.0	8.0	14.4	4.0	16.0	1.6	10.0			
	027	100	16.0	16.0	22.0	16.0	16.0	19.0			3.0				
Piston	027	100	22.0	22.0	40.0	19.0	19.0	38.0	Not poss	ible with	6.5				
Pis	017	100	40.0	40.0	55.0	38.0	38.0	50.0	only i	1 BMS	7.0				
	017	100	55.0	55.0	100.0	50.0	50.0	90.0			12.0				
۸۶	236	35	5.5	11.0	22.0	5.5	11.0	16.0	5.5	22.0	1.6	10.0			
	S 236 315	35	8.3	16.0	35.0	8.3	16.0	28.0	8.3	35.0	2.5	20.0			
B	315	72	17.5	35.0	72.0	17.5	28.0	65.0	17.5	72.0	5.0	33.0			



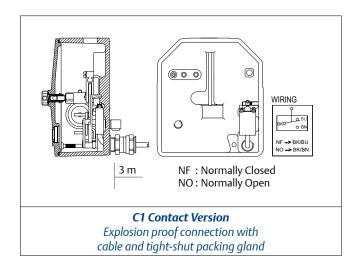


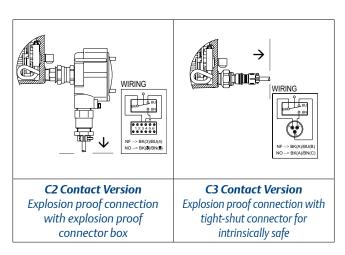
Applications and Construction Guide

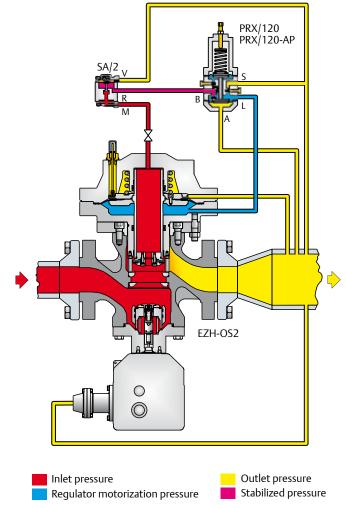
Analization	Mechan	ism Box	Manometric Sensing Device		
Application	BM1	BM2	BMS1	BMS2	
Overpressure Shut-off (OPSO)	Yes	No	Yes	No	
Underpressure Shut-off (UPSO)	Yes	No	Yes	No	
Overpressure Shut-off (OPSO) and Underpressure Shut-off (UPSO)	Yes	No	Yes ⁽¹⁾	No	
Overpressure Shut-off (OPSO) and Underpressure Shut-off (UPSO)	No	Yes	Yes ⁽²⁾	Yes	
Overpressure Shut-off (OPSO), Overpressure Shut-off (OPSO) and Underpressure Shut-off (UPSO)	No	Yes	Yes	Yes	

- 1. When using one manometric sensing device (BMS1) for both overpressure and underpressure shutoff, make sure that the difference between set pressures falls within the maximum range shown in above table "Spring Adjustment Ranges".
- 2. When using two manometric sensing devices (BMS1 and a BMS2), the BMS1 can only be used for high trip.

	Versions of Explosion Proof Limit Switches											
Versions Installment Tightness Connect			Connection	Mechanical connections	Electrical connections							
versions	IIIStallillelit	rigililiess	Connection	Mechanical connections	Common	NF	NO	Connection				
C0		IP 68	Without	Cap 1/2 NPT								
C1	Explosion proof	IP 68	Explosion proof	3 m wire	Black	Blue	Brown	Wires				
C2	Explosion proof	IP 65	Explosion proof	Connector box explosion proof PE explosion proof	3	4	5	Screwed wiring				
C3	Intrinsically safe	IP 68	Explosion proof	Intrinsically safe tight-shut connector	Α	В	С	Welded wiring				







Pilots

The Type EZH and EZHSO pressure reducing regulator includes a PRX Series pilot mounted on the Type EZH and EZHSO main valve for pressure reducing or wide-open monitoring applications.

PRX Series pressure reducing pilots have the ability to handle a wide range of set points from 1 to 80 bar:

Type PRX/120

Outlet pressure range of 0.5 to 42 bar. The Type PRX/120 can be used as the pilot on single stage pressure reducing regulators or as the monitor pilot or as the working pilot in wide-open monitor systems.

Type PRX/120-AP

Outlet pressure range of 30 to 80 bar. The Type PRX/120-AP can be used as the pilot on single stage pressure reducing regulators or as the monitor pilot or as the working pilot in wide-open monitor systems.

Type PRX/125

Identical to the Type PRX/120 except the restriction screw is removed. The Type PRX/125 can only be used as the monitor override pilot on working monitor applications.

Type PRX/125-AP

Identical to the Type PRX/120-AP except the restriction screw is removed. The Type PRX/125-AP can only be used as the monitor override pilot on working monitor applications.

The Type SA/2

Pilot supply filter regulator, provides a constant supply pressure to the PRX Series pilot that is 3 bar over set pressure. The Type SA/2is equipped with a 5μ filtering degree filter and is suitable for heating.

PRX/ Series



	Application		Allowable		Body and Covers Material	
Regulator or	Operatin	g Monitor	Pressure	Set Range W _d (bar)		
Monitor	Regulator	Monitor	PS (bar)	Tr _d (Sur)		
PRX/120	PRX/120	PRX/125	100	0.5 - 42	Ctool	
PRX-AP/120	PRX-AP/120	PRX-AP/120	100	30 - 80	Steel	

1/4" NPT female threaded connections

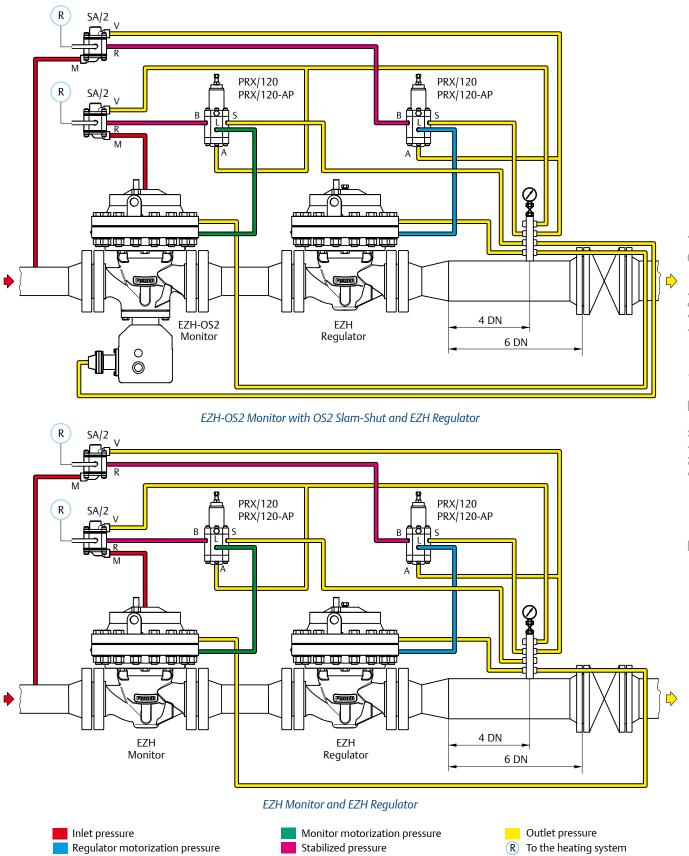
The SA/2 pressure pre-reducer must be used with PRX/ series pilots.

SA/2

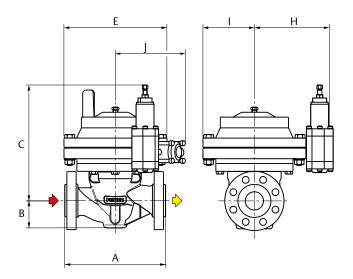


Model	Allowable Pressure PS (bar)	Supplied Pressure	Body and Covers Material	
SA/2	100	3 bar + Downstream pressure	Steel	

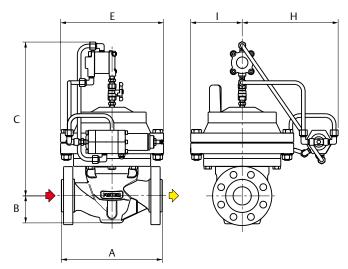
Examples of Connections



Overall Dimensions and Weights



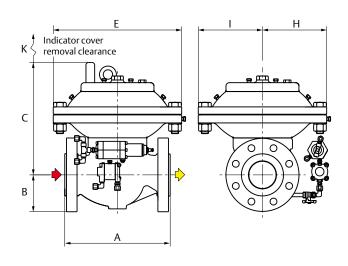
EZH and EZHSO with PRX Pilot Vertical Position



EZH and EZHSO DN 25, 50 and 80 with PRX Pilot Horizontal Position

	Weights (kg)							
DN	PN 16 B ANSI 150	PN 25 B - PN 40 B ANSI 300	ANSI 600					
25	38	39	40					
50	71	74	75					
80	145	151	153					
100 * 211		224	239					

Note: For EZHSO version add 1 kg

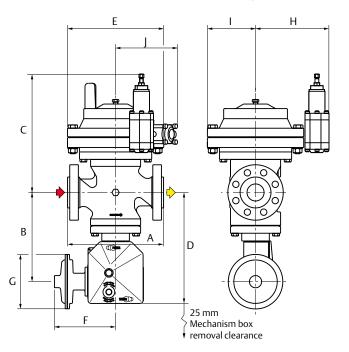


EZH DN 100 with PRX Pilot Horizontal Position

								Overall Din	nensions (r	nm)					
DN	Α					С			Н						
	ANSI 150	ANSI 300	ANSI 600	PN 16 B	PN 25 B	PN 40 B	В	PRX Horizontal	PRX Vertical	E	PRX Horizontal	PRX Vertical	I	J	K
25	184	197	210		193.5		62	404	282	225	238	190	113	210	38
50	254	267	286	254	26	57	83	445	287	287	267	286	144	197	36
80	298	317	337	310	31	17	105	532	425	400	325	349	200	337	51
100 [*]	352	368	394	350	36	58	137	442	427	480	342	394	240	140	וכן

 $^{^{*}}$ Available only for EZH and EZH-OS2 configurations - Threaded 1/4" NPT female impulse connections

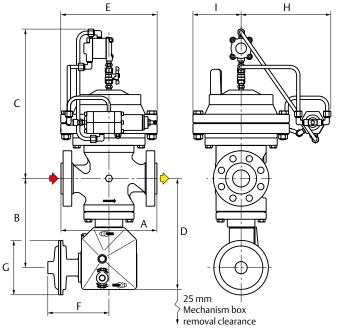
Overall Dimensions and Weights



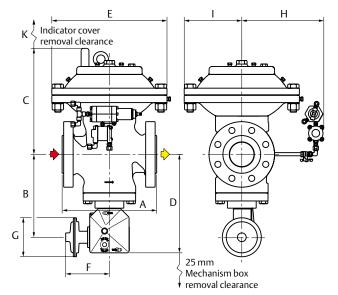
EZH-OS2 and EZHSO-OS2 with PRX Pilot Vertical Position

	Weights (kg)							
DN	PN 16 B ANSI 150	PN 25 B - PN 40 B ANSI 300	ANSI 600					
25	49	50	51					
50	81	83	85					
80	168	175	177					
100 * 237		250	265					
Note: For EZ	HSO version add 1	kg						

		Slam-Shut Overall Dimensions (mm)										
DN		F		G								
	Diaphragm	Piston	Bellows	Diaphragm	Piston	Bellows						
25												
50	181	204	223	162	71	74						
80] 101	204	223	102	/ 1	/4						
100*												



EZH-OS2 and EZHSO-OS2 DN 25, 50 and 80 with PRX Pilot Horizontal Position



EZH-OS2 DN 100 with PRX Pilot - Horizontal Position

	Overall Dimensions (mm)															
DN	A							С				Н				
	ANSI 150	ANSI 300	ANSI 600	PN 16 B	PN 25 B	PN 40 B	В	PRX Horizontal	PRX Vertical	D	E	PRX Horizontal	PRX Vertical	I	J	K
25	184	197	210		193.5		250	404	282	315	225	238	190	113	210	38
50	254	267	286	254	267		265	445	287	330	287	267	286	144	197	ا هد
80	298	317	337	310	317		301	532	425	366	400	325	349	200	337	- 51
100*	352	368	394	350	368		345	442	427	410	480	342	394	240	140	

 $^{^{*}}$ Available only for EZH and EZH-OS2 configurations - Threaded 1/4" NPT female impulse connections

Natural Gas Technologies

Emerson Process Management Regulator Technologies, Inc.

O.M. I. Officina Meccanica Tartarini s.r.l. Via P. Fabbri, 1

I - 40013 Castel Maggiore (Bologna), Italy

Tel.: +39 - 0514190611 Fax: +39 - 0514190715

E-mail: info.tartarini@emersonprocess.com

Francel S.A. Z.A. La Croix Saint Mathieu 28320 Gallardon France

Tél: +33 (0)2 37 33 47 00 Fax: +33 (0)2 37 31 46 56

For further information visit www.emersonprocess.com/regulators

The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their prospective owners. Fisher is a mark owned by Fisher Controls, Inc., a business of Emerson Process Management.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. We reserve the right to modify or improve the designs or specifications of such products at any time without notice.

Emerson Process Management does not assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use and maintenance of any Emerson Process Management product remains solely with the purchaser.

